

## ABSTRACT OF THE DISCLOSURE

A linear motor including a coil, a plurality of first magnet groups having polar directions disposed in periodically different directions, and a plurality of second magnet groups having polar directions disposed in periodically different directions. In a set including a predetermined magnet of the first magnet groups and a magnet of the second magnet groups, corresponding to the predetermined magnet, magnetization directions of the set of magnets have mutually different tilts with respect to the central axis of the coil. The coil includes a first coil effective to produce a Lorentz's force between the first coil and the first magnet groups, and a second coil effective to produce a Lorentz's force between the second coil and the second magnet groups.